This listing of claims presented below replaces all prior versions and listings of claims in the application.

Listing of Claims

IN THE CLAIMS

Claims 1-17 (Cancel)

- 18. (Currently amended) <u>A method</u> to evaluate the integrity of <u>chromatin/DNA</u> <u>chromatin or DNA</u> of sperm cells of an animal comprising:
- a) treating a sample containing the sperm, with a solution of DNA denaturing solution,
- b) a single treatment step of treating the sample in the solution obtained in step a) with a lysis solution to extract nuclear proteins of the sperm cells, wherein the lysis solution does not contain protein denaturing detergents, and
- c) evaluating the integrity of the chromatin/DNA chromatin or DNA of the sperm cells based on measurement of halo size of the sperm cells.
- 19. (Cancel)
- 20. (Currently amended) The method Method according to claim 18, wherein the lysis solution comprises a non-ionic non protein denaturing detergent.
- 21. (Currently amended) The method Method according to claim 20, wherein the non ionic detergent is selected from the group consisting of toctylphenoxypolyethoxyethanol (Triton X-100); N, N-bis(3-D-Gluconamidopropyl) cholamide (bigCHAP); Brij(r) 35 P; N-decanoyl-N-methylglucamine; digitonin; dodecanoyl-N-methylglucamide; heptanoyl-N-methylglucamide; branched octylphenoxy poly (ethyleneoxy) ethanol (Igepal CA-630); N-Nonanoyl-N-methylglucamine; Nonidet P 40; N-Octanoyl-N-methylglucamine; Span 20 solution; Polysorbate 20 (Tween 20) and a mixture thereof.

- 22.(Currently amended) The method Method according to claim 18, wherein the lysis solution comprises sodium chloride between 1 and 3M, dithiothreitol (DTT) between 0.001 and 2M, 2-amino-2 (hydroxymethyl)-1,3-propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.
- 23. (Currently amended) The method Method according to claim 18, wherein the lysis solution comprises 2.5M sodium chloride, about 0.2M DTT, about 0.2M Tris, about 1% Triton X-100 and a pH of about 7.5.
- 24.(Currently amended) <u>The method</u> <u>Method</u>(Previously Presented) Method according to claim 18, wherein the DNA denaturing solution is an acid solution.
- 25. (Currently amended) The method Method according to claim 24, wherein the DNA denaturing solution comprises an acid selected from hydrochloric, acetic, nitric acid or a mixture thereof.
- 26.(Currently amended) <u>The method</u> <u>Method</u>(Previously Presented) Method according to claim 25 wherein the DNA denaturing solution comprises hydrochloric acid.
- 27.(Currently amended) The method Method according to claim 18 wherein after steps a) and b) there is a sample staining step.
- 28. (Currently amended) The method Method according to claim 27 wherein the staining is made with a Wright type solution.
- 29. (Currently amended) <u>The method</u> <u>Method</u> according to claim 28, wherein the sample containing the sperm is included in a medium similar to a suspension.
- 30. (Currently amended) <u>The method Method</u> according to claim 29, wherein the sample containing the sperm is included in an agarose microgel.

- 31. (Withdrawn) A kit for performing the method of claim 18 which comprises:
 - a) a DNA denaturing solution;
- b) a single lysis solution to extract nuclear proteins, wherein the lysis solution does not contain a protein denaturing detergent; and
 - c) instructions for treating the sperm and evaluating the integrity of the chromatin/DNA of the sperm.
- 32. (Withdrawn) The kit according to claim 31, wherein the lysis solution comprises sodium chloride between 1M and 3M, dithiothreitol (DTT) between 0.001M and 2 M, 2-amino-2 (hydroxymethyl)-1,3 propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.
- 33. (Withdrawn) The method according to claim 21, wherein the non ionic detergent is Triton X-100.
- 34. (Withdrawn) The method according to claim 29, wherein the medium is a microgel.